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A REVISION OF ALOE TRANSVAALENSIS, O.
KUNTZE, TOGETHER WITH DESCRIPTIONS OF
THREE NEW ALOES FROM THE TRANSVAAL, ONE
FROM NATAL, AND A NEW LEPTALOE FROM
ZULULAND.

(With Plates XIII—XVIII.)

By G. W. REYNOLDS.

It has been presumed that the *Aloe* which flowers in February—March on hills at Pretoria, belongs to the species *A. transvaalensis* O. Kuntze, but any botanist who has examined flowering specimens at the Fountains and elsewhere near Pretoria, must have noticed the tremendous variation which occurs in branching, length of pedicels and bracts, and shape, size and colour of flowers. As to which of these represents the typical form has remained unknown. Kuntze's original description states, *inter alia*,¹ "*folia loriformia . . . haud acuminata*", but it is extremely doubtful whether plants can be found at Pretoria to-day with leaves "strap shaped and not at all acuminate." The inflorescence is described about 1 met. high, the flowers brick coloured, while in Berger's account,² the bracts are described 15 mm. long, the pedicels 20 mm.

Unfortunately there is no type material preserved in South Africa, nor any authentic material in the sense of specimens compared with the type, but owing to the great kindness of Dr. H. G. Schweickerdt at Kew, in arranging with the New York Botanical Garden to send Kuntze's type on loan to the Principal Botanist, Pretoria, I have fortunately been able to examine this material. There is one sheet, the material consisting of one small leaf and an incomplete inflorescence. The leaf is 15 cm. long, 4.5 cm. broad at base, lanceolate-attenuate, the marginal teeth 5 mm. long 10 mm. distant,—certainly not "*loriformia haud acuminata*" as described. The inflorescence is about 60 cm. long, with

¹ *Vide* Rev. gen. 111 (1898) 314.

² Engler: Das Pflanzenreich, Liliac.-Asphodel.-Alcin. 1908, p. 211.

five short branches without flowers, but in a capsule on the sheet there are six dried flowers 30 mm. long, from which it is impossible to gauge the shape and diameter of the basal swelling. There is a note "Pretoria, Transvaal, 17/2/94." From this material it is evident that a weak form of the species was described, and that the type is not characteristic of the most frequent form found at Pretoria. It is hardly likely that Kuntze would have described a plant from near Pienaars River (34 miles North of Pretoria), where *A. transvaalensis* and another species grow socially, cross freely, and produce a bewildering variety of intermediate forms.

With a view to reaching some finality, it seems advisable that the description of this species should be amplified to include that form which is most frequent and characteristic of the species, not only at Pretoria, but elsewhere in the Transvaal. From observations at the Fountains, Pretoria, during February-March 1935-1936 the writer would propose the following amplification as describing the most frequent form, and the one considered to be typical of the species.

Aloe transvaalensis, O. Kuntze. Acaulescent, solitary, or in small groups. *Leaves* 12—16, densely rosulate, lanceolate-attenuate, rather fleshy, usually arcuate-suberect in lower half, spreading to slightly recurved above, up to 20—25 cm. long, 6—7 cm. broad at base; upper surface flat low down, gradually slightly canaliculate upwards, dull somewhat milky-green, with numerous dull white oval spots more or less confluent and arranged into a series of interrupted undulating transverse bands; lower surface convex, paler green, obscurely lineate, with fewer duller white spots arranged in more obscure bands; the margins narrowly sinuate-dentate, the teeth deltoid, pungent, light brown, 3—4 mm. long, 10—15 mm. distant, slightly more crowded near base, more distant upwards, the interspaces whiter and less horny below, more horny towards apex. *Inflorescence* a branched panicle, 1—1.5 met. high, branched above the middle with 5—8 arcuate erect or sub-erect branches, the lowest sometimes with 1—2 branchlets and subtended at base by subscarios attenuate many nerved bracts up to 5—6 cm. long. *Peduncle* semi-terete, brown, covered with a greyish powdery substance. *Racemes* cylindric, slightly acuminate, the terminal up to 30 cm. long, 8—9 cm. diam. rather laxly about 36 flowered, the lateral slightly shorter, fewer flowered, and lower than the terminal; the buds rather lax, with dull whitish stripes, the open flowers cernuous or sub-pendulous, ranging from flesh-pink to light coral-red in colour. *Pedicels* the lowest of the terminal raceme 10—15 mm. long. *Bracts* narrowly lanceolate-acuminate, thin, scarios, many nerved, about half as long

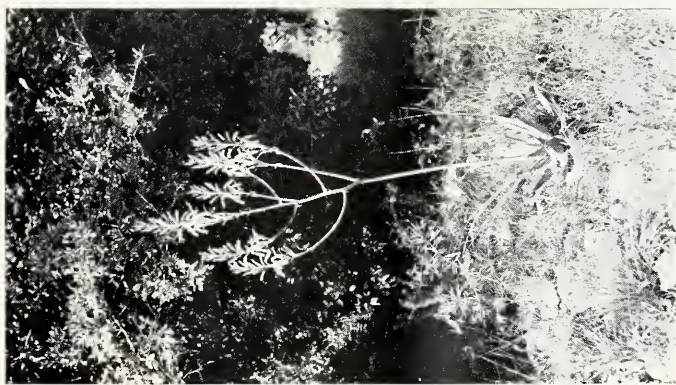


FIG. 1.

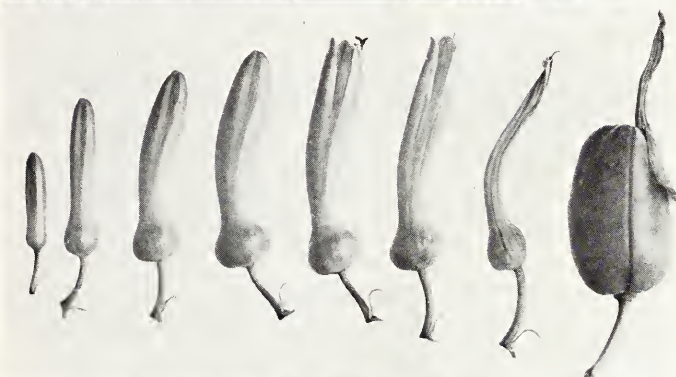


FIG. 2.

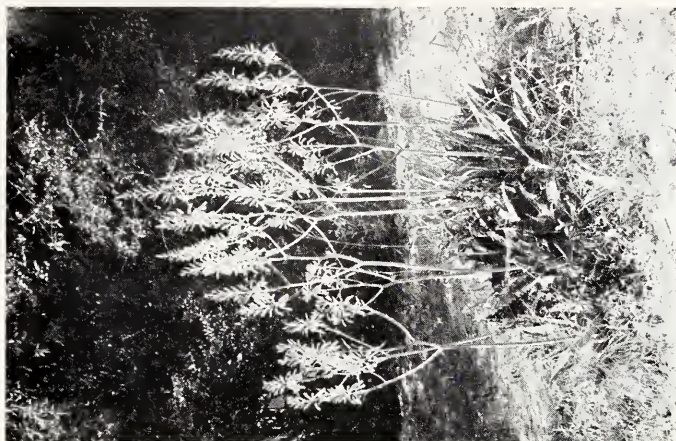


FIG. 3.

PLATE XIII. *Aloe transvaalensis*, O. Kuntze.

FIG. 1. Flowering plant photographed at the Fountains, Pretoria, on 11 March, 1936, typical of the species.
 FIG. 2. Flowers natural size, from the bud to post-pollination stage; the fruit also natural size.
 FIG. 3. A group, photographed at the Fountains, Pretoria, 11 March, 1936.

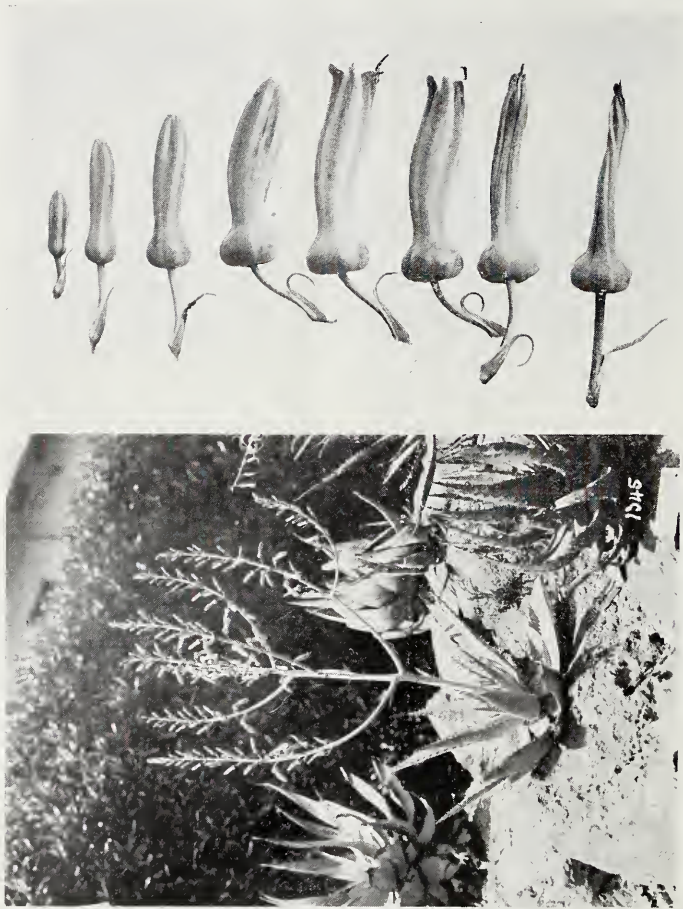


PLATE XIV. *Aloe ammophila*, Reynolds.

- FIG. 1. Plant from 3 miles south of Pietersburg, North Transvaal, flowering in Johannesburg, 14th March, 1936.
 Note : In the wild state this species suckers freely, soon forming dense groups.
 FIG. 2. Flowers natural size, from the bud to post-pollination stage.

as the pedicels. *Perianth* flesh-pink, 36 mm. long, with sub-globose basal swelling 9—10 mm. diam. constricted above the ovary to 5 mm. thence slightly decurved and enlarging towards the throat, with open mouth. *Outer segments* free for 10 mm. from apex, with 1 mm. broad white marginal border, about 5—7-nerved, the nerves confluent at a somewhat brownish-green apex, the apices sub-acute, slightly spreading. *Inner segments* dorsally adnate to the outer for their greater length, with white marginal border twice as broad as the outer, and with more obtuse more spreading apices, very obscurely about 7-nerved, the nerves somewhat pale brownish-green at apex. *Filaments* very pale lemon, flattened, the 3 inner narrower and lengthening in advance of the 3 outer. *Anthers* the 3 inner and 3 outer in turn exerted 2—4 mm. *Stigma* at length exerted 2—4 mm. *Ovary* 7 mm. long, 3 mm. diam. slightly tapering into the style, finely 6-grooved, green. *Capsule* oblong, 28 mm. long, 16 mm. diam. at middle, 6-grooved, green.

Hab : Transvaal, at the Fountains, Pretoria, flowering 11th March 1936, Reynolds 1797 (typical form) in National Herbarium, Pretoria. Plants 1165.3.36 in Garden of Botanical Section, Division of Plant Industry, Pretoria, and 536/34 in National Botanic Gardens, Kirstenbosch. (Plate XIII.)

This species is found in the Pretoria, Johannesburg, Heidelberg, Standerton, Rustenburg, Marico and other Districts in the Transvaal, while what appears to be a form of this species occurs as far west as the Khomas Mountains in South West Africa. Its habitat is chiefly rocky slopes, often at the foot of kopjes, and frequently in between bushes, while it appears to prefer a westerly aspect. When found in sandy flats, it often grows socially with *A. ammophila* Reynolds, with which species it crosses freely, producing a variety of intermediate forms. *A. transvaalensis* is variable in length, shape and colour of flowers, also in the relative length of bract to pedicel. In the typical form, the perianth is flesh-pink, but forms occur with colours ranging from orange to red. Usually the lowest pedicels of the terminal raceme are twice the length of the bracts, but forms are found with bracts as long as the pedicels. The racemes are characterised by the buds being greyish striped, sub-erectly spreading, rather lax, and not densely congested. The leaves are usually of a dull, somewhat milky-green colour, the upper surface always with spots more or less confluent and arranged into a series of transverse bands, the lower surface more obscurely spotted, with the bands less defined. The species flowers in its various stations from January to March.

It is perhaps advisable to record that the Principal Botanist, Pretoria, has despatched to Herb. Kew, and to the New York Botanic Gardens,

specimens from the Fountains, Pretoria, (Reynolds 1799) as representing the form typical of the species.

Aloe ammophila, Reynolds, species nova in sectione *Saponariarum*, *A. transvaalensi* O. Kuntze affinis. *Herba* succulenta, acaulis, sobolifera mox eacspitosa. *Folia* 10—14, dense rosulata, lanceolato-attenuata, carnosae, usque ad 22 cm. longa, 5—6 cm. lata, supra basin versus planiuscula, sensim leviter canaliculata, maculis oblongis albis saepe confluentibus et paullo transverse fasciatim seriatis; subtus convexa, pallide glauoviridia, maculis albis oblongis irregulariter transverse seriatis pallidioribus fasciata, interdum obscure maculata vel immaculata, marginibus dentibus deltoideis pungentibus brunneis 4—5 mm. longis, 8—12 mm. distantibus. *Inflorescentia* saepe 66 cm. alta, ramis 5—6, rami arcuatoerecti. *Pedunculus* basin versus leviter complanatus, circiter 14 mm. diam. *Racemi* cylindrici leviter acuminati, circiter 20—25 cm. longi, 7 cm. lati, gemmis congestis, floribus laxioribus 15—30 mm. distantibus. *Pedicelli* 15 mm. longi. *Bracteae* pedicellos aequantes, deltoideo-acuminatae, subseariosae, circiter 12-nervatae. *Perigonium* rubrum, 30—33 mm. longum, basi subgloboso-inflatum, (9—10 mm. diam.) supra ovarium constrictum, (5—6 mm.) deinde decurvatum et faucem versus ampliatum. *Segmenta exteriora* per 10—11 mm. libera, ad margines albida, apice subacuta paulum patula, obscure 5-nervis; interiora latiora, obtusiora, marginibus albis duplo latioribus. *Filamenta* complanata. *Genitalia* 3—4 mm. exserta. *Ovarium* 8 mm. longum, 3.5 mm. diam., in stylum acuminatum.

Hab.: Transvaal, Pietersburg Dist., sandy flats 3 miles south of Pietersburg on the road to Chunes Poort, cultivated plants fl. 14th March 1936 in Johannesburg, Reynolds 1345 (type) in National Herbarium, Pretoria; Plants 1224/35 in National Botanic Gardens, Kirstenbosch. (Plate XIV.)

As its name implies, *A. ammophila* is a sand loving species; it occurs in considerable quantities in the more sandy parts of the central and Northern Transvaal, especially near Pietersburg, Bantolier Kop, Louis Trichardt, and beyond the Zoutpansberg towards Messina. It is also found in the Springbok Flats east of Warmbaths, Naboomspruit, Potgietersrust, and north-eastwards towards Malips Drift. It suckers freely, soon forms dense groups, and is often found in dense colonies of several hundred plants. *A. ammophila* is closely allied to *A. transvaalensis* O. Kuntze, but the latter is a larger plant, with taller inflorescence, longer narrower flesh-pink flowers, with the bracts half as long as the pedicels, and with the buds not densely congested at apex of racemes. In *A. ammophila* the inflorescence is usually only 2 feet high.

with the terminal raceme only slightly higher than the lateral and forming a somewhat broadly corymbose panicle. The species is variable in branching, shape, size and colour of flowers, but is usually recognised by its somewhat milky-green leaves, the low inflorescence, the bracts as long as the pedicels, the coral-red flowers, and the greenish buds congested at apex of the acuminate racemes.

Description.—*Herb* succulent, acaulescent, freely suckering and forming dense groups. *Leaves* 10—14, densely rosulate, lanceolate-attenuate, up to 22 cm. long, 5—6 cm. broad, upper surface dull green, flat near base, slightly canaliculate upwards, with numerous oval white spots more or less confluent and arranged into a series of irregular undulating transverse bands; lower surface convex, obscurely lineate, immaeulate or sometimes clearly or obscurely spotted in transverse bands; margins sinuate-dentate, with deltoid pungent light brown teeth 4—5 mm. long, 8—12 mm. distant, smaller and more crowded near apex, the interspaces rounded. *Inflorescence* usually about 66 cm. high, divaricately branched from the middle with 5—7 arcuate erect branches, the lowest sometimes with 1—2 branchlets, and subtended at base by rather fleshy attenuate bracts 5—6 cm. long, 15—20 mm. broad, the bracts many-nerved, the lateral racemes more or less as long and high as the terminal, forming a rather corymbose panicle. *Peduncle* slightly flattened and about 14 mm. diam. low down, more terete upwards, brown, covered with a greyish powdery substance. *Racemes* cylindric, slightly acuminate, about 20—25 cm. long, 7 cm. diam., subluxly about 30-flowered, the buds slightly denser, greenish, gradually laxer downwards with the lowest flowers coral-red, 15—30 mm. distant. *Pedicels* up to 15 mm. long, slightly longer in the fruit. *Bracts* deltoid-acuminate, spreading and recurved, thin subscarios many-nerved, as long as the pedicels or slightly longer. *Perianth* coral red, 30—33 mm. long, with a subglobose basal swelling 9—10 mm. diam., constricted above the ovary to 5—6 mm. diam., thence decurved and enlarging towards the throat, slightly compressed laterally, the mouth open. *Outer segments* free for 10—11 mm., with 1 mm. wide white marginal border and sub-acute slightly spreading apices, obscurely 5-nerved, the nerves confluent at apex. *Inner segments* free, but dorsally adnate to the outer for their greater length, broader and with more obtuse more spreading apices than the outer, the white marginal border twice as broad. *Filaments* flattened, the three inner narrower and lengthening in advance of the three outer. *Anthers* the 3 inner and the 3 outer in turn exerted 3—4 mm. *Stigma* at length exerted 2—4 mm., and remaining exerted after pollination. *Ovary* 8 mm. long, 3.5 mm. diam. slightly tapering into the style, finely 6-grooved, green.

Aloe Vogtsii, Reynolds, species nova et pulcherrima in sectione *Saponariarum*, *A. petrophila* Pillans affinis, sed racemis laxioribus longioribusque differt. *Herba* succulenta, caulibus brevibus, vel usque ad 20 cm. longis. *Folia* 16—20, dense rosulata, lanceolato-attenuata, erecto-patentia, 20—25 cm. longa, basi 5—6 cm. lata; supra viridia concavia albomaculata, subtus convexa, maculis minutissimis, ad margines dentata, dentibus deltoideis, corneis deflexis brunneis 3 mm. longis 10—15 mm. distantibus. *Inflorescentia* circiter 66 cm. alta, medio circiter 7-ramosa, rami arcuato-erecti. *Pedunculus* semi-teres, circiter 13 mm. diam. *Racemi* breviter cylindrici, leviter acuminati, terminali usque ad 20 cm. longi, 8 cm. lati. *Bractee* 10—15 mm. longae, ovato-acuminatae, circiter 9-nervatae. *Perigonium* coccineum, 34 mm. longum, basi subgloboso-inflatum, (9 mm. diam.), supra ovarium constrictum (5 mm.) deinde decurvatum et faucem versus ampliatus. *Segmenta exteriora* per 9 mm. libera, marginibus pallidioribus, apice sub-acuta, paullum patula; interiora obtusiora, latiora. *Filamenta* complanata. *Genitalia* vix vel brevissime exserta. *Ovarium* 8 mm. longum, 3 mm. diam.

Hab.: N. Transvaal, Zoutpansberg Dist. at Franzhoek, 10 miles north-east of Louis Trichardt, cultivated plant fl. 22nd March, 1936, in Johannesburg, Reynolds 1488 (type) in National Herbarium, Pretoria and Bolus Herbarium, Kirstenbosch. Plant 376.7.35 in garden of the Botanical Section, Division of Plant Industry, Pretoria. (Plate XV.)

This very distinctive new *Aloe* was discovered by Mr. Louis R. Vogts on the farm "Franzhoek," about 10 miles north-east of Louis Trichardt, and is named after the collector, who, apart from being an enthusiastic collector and keen student of the genus, has also contributed much material to the Herbarium and Garden of the Division of Plant Industry, Pretoria. Mr. Vogts has also found the species at Devil's Gully, and on rocky slopes further east above Pisanghoek, while the writer has collected it near "Schyffontein," about 6 miles north of Louis Trichardt. These localities are more or less along the top, or high up on rocky slopes of the Zoutpansberg, in the mist belt, and at an approximate elevation of 4,700 ft. This species does not sucker freely and form dense groups; although groups of 6—8 plants are sometimes seen, 2—4 seems to be most frequent. The narrowly elliptic double spots, somewhat resembling an elongated "H" in shape, on the leaf upper surface suggest an affinity with *A. petrophila* Pillans, which occurs in that neighbourhood on rock faces at Wylies Poort, but the latter has much smaller shorter capitate racemes, and very different flowers.³

³ No figures accompany the Author's original description in *S.A. Gardening*, Sept. 1933, p. 213; it is however illustrated in *Flowering Plants of South Africa*, Part 56, October 1934, Plate 555.

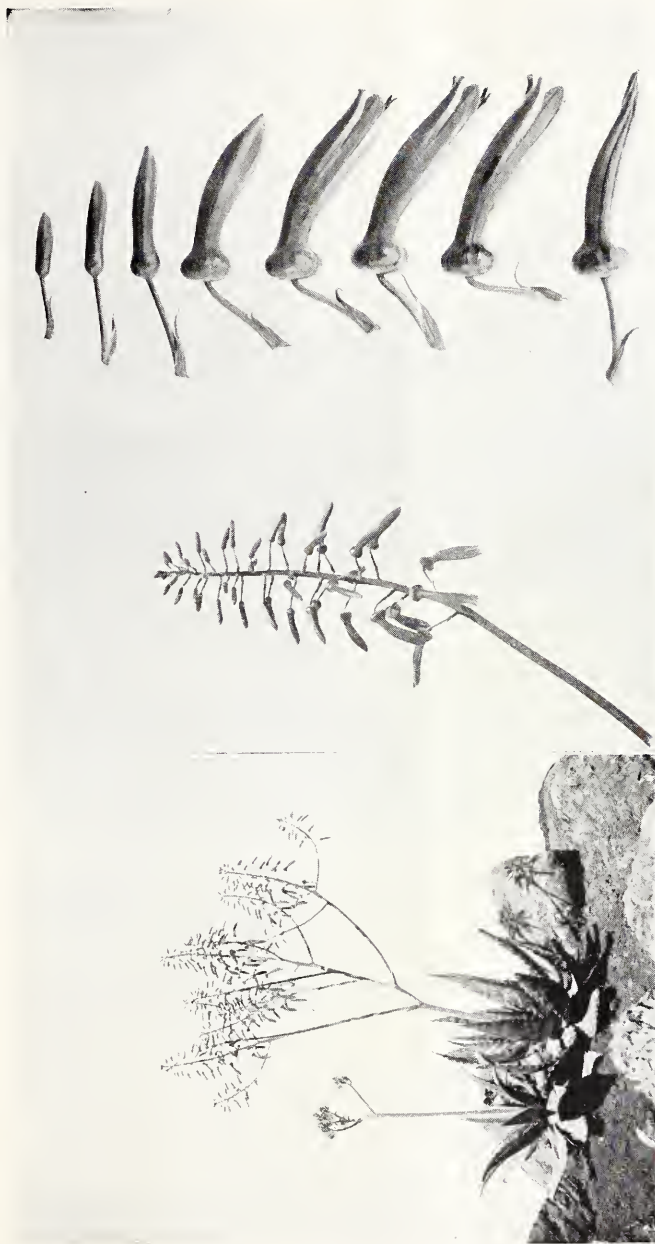


FIG. 3.

FIG. 2.

FIG. 1.

PLATE XV. *Aloe Vogtsii*, Reynolds.

FIG. 1. Flowering plant, collected by Mr. L. R. Vogts in the Zoutpansberg, 10 miles north-east of Louis Trichardt, flowering 22 March, 1936, in Johannesburg.

FIG. 2. Raceme, one quarter natural size.

FIG. 3. Flowers 1 1, from the bud to the post-pollination stage.



FIG. 1.

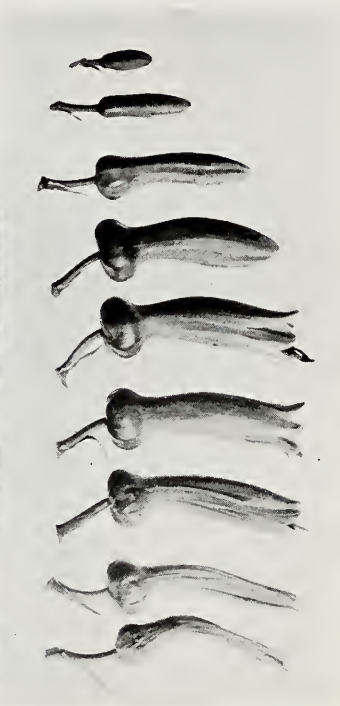


FIG. 2.

PLATE XVI. *Aloc komatiensis*, Reynolds.

FIG. 1. Plant flowering 24 March, 1936 in the author's garden in Johannesburg, height 6 feet; collected by Mr. C. Foster near Komatipoort, East Transvaal, alt. 650 feet.

FIG. 2. Flowers 1/1 from the bud to post-pollination stage.

A. Vogtsii does not appear to be closely allied to any other species in the section *Saponariae*, and is characterised by its peculiar leaf spotting and the set of the pedicels. The lower leaf surface is copiously spotted with minute green spots, with dull whitish broken wavy transverse bands, which seems to be a character peculiar to this species. From the accompanying illustration of a raceme, it will be noticed that the youngest pedicels and buds are sub-oblique, lower the pedicels are horizontal with the buds slightly declinate, while the lowest pedicels are sub-erectly spreading, with the flowers cernuous to pendulous.

At the Franzhoek locality. Mr. Vogts has collected a cross of *A. Vogtsii* with *A. Vossii*, Reynolds (section *Leptoaloe*), and another with the Zoutpansberg form of *A. arborescens*, Mill. With its dark sap-green leaves (cress green R.C.S.), scarlet flowers, and flowering in March before the frosts, this handsome species is one well worth cultivating.

Description.—*Herb* succulent, with stem short or up to 20 cm. long. *Leaves* 16—20, densely rosulate, 20—25 cm. long, 5—6 cm. broad, lanceolate-attenuate, erectly spreading, terminating with a short pungent horny spine; upper surface cress green, slightly concave, obscurely lineate, with numerous white spots, scattered or more or less arranged in a series of wavy interrupted transverse bands, the narrowly elliptic double spots somewhat "H" shaped; lower surface convex, duller green, with numerous deeper green minute spots, with obscure rather wavy irregular transverse dull whitish bands, and with a few short pale brown teeth in the median line near apex; the margins armed with deltoid pungent horny pale brown teeth, the teeth slightly deflexed, about 3 mm. long and 10—15 mm. distant, more isolated and with rounded white interspaces near base, browner and more sinuate-dentate upwards. *Inflorescence* about 66 cm. high, branched from about the middle, with about 7 arcuate-erect branches, the 1—3 lowest with 2—3 branchlets and subtended at base by subscarious acuminate bracts about 5 cm. long, 15 mm. broad, the bracts many-nerved, armed with a few short brown marginal teeth in upper third, the apex pungent. *Peduncle* semi-terete, about 13 mm. diam., brown, lightly covered with a greyish powdery substance. *Racemes* broadly cylindric, slightly acuminate, sub-laxly 30—40 flowered, the terminal slightly higher than the lateral, about 20 cm. long, 8 cm. broad, the lateral shorter and fewer flowered, the youngest buds greenish tipped, obliquely spreading, older buds more horizontally disposed with the open scarlet flowers cernuous to sub-pendulous. *Bracts* 10—15 mm. long, ovate-acuminate, thin sub-scarious, about 9-nerved, amplexicaul at base, spreading to recurved above. *Pedicels* up to 18 mm. long in the terminal raceme, slightly shorter in the lateral. *Perianth* scarlet, paler at mouth, 34 mm. long, sub-glo-

bosely inflated at base (9 mm. diam.), constricted above the ovary to 5 mm., thence decurved and enlarging towards the throat, slightly compressed laterally. *Outer segments* free for 9 mm. from apex, with pale yellowish 1 mm. wide marginal border, and with sub-acute very slightly spreading apices. *Inner segments* with slightly broader dull pale yellowish border, and with more obtuse more spreading apices. *Filaments* pale lemon, much flattened, the 3 inner narrower and lengthening in advance of the 3 outer. *Anthers* scarcely exerted. *Style* slightly yellower than the filaments, with the stigma scarcely exerted. *Ovary* green, 8 mm. long, 3 mm. diam. at base, slightly tapering into the style, finely 6-grooved. The leaf sap dries purple.

Aloe komatiensis, Reynolds, species nova in sectione *Saponarium*, *A. zebrinae* Bak. affinis, sed habitu florum et succo foliorum purpurascens distinguitur. *Herba* succulenta, caulibus 10—20 cm. longis, nec sobolifera, (? an semper). *Folia* 16—24, dense rosulata, lanceolato-attenuata, recurvula, carnosa, usque ad 40 cm. longa, 9—12 cm. lata, supra planiuscula, apicem versus subcanaliculata, obscure viridia, maculis oblongis albidis numerosis transverse irregulariter fasciatim seriatis picta; subtus convexa, obscure lineata, immaculata; ad margines sinuato-dentata, dentibus corneis pungentibus brunneis 4 mm. longis, 10—12 mm. inter se distantibus armata. *Inflorescentia* 2 met. alta, supra medium ramosa, ramis circiter 8. *Pedunculus* basin versus leviter complanatus, circiter 3 cm. diam., pruinosis. *Racemi* cylindrici, acuminati, ad 30—40 cm. longi, 6—7 cm. diam., 40—50 floribus sub-laxis. *Pedicelli* usque ad 9 mm. longi. *Bractee* anguste lanceolato-acuminatae, subscariosae, obscure plurinerviae, 10—12 mm. longae. *Perigonium* latericium, 30 mm. longum, basi subgloboso-inflatum (9.5 mm. diam.), supra ovarium constrictum, (5.5 mm. diam.), deinde decurvatum et faucem versus ampliatum. *Segmenta exteriora* per 7 mm. libera, pallide marginata, apice subacuta, leviter recurvula; interiora latiora, obtusiora. *Genitalia* brevissime exserta. *Ovarium* 8 mm. longum, basi 3 mm. diam. Succus foliorum purpurascens.

Hab.: Eastern Transvaal, Komatipoort, alt. 650 ft.; cultivated plant flowered 24th March 1936 in Johannesburg, Reynolds 1543 (type) in National Herbarium, Pretoria and Bolus Herbarium, Kirstenbosch. (Plate XVI.)

The species is described from a plant originally collected by Mr. Cyril Foster near Komatipoort, E. Transvaal, and which flowered in the Author's garden in Johannesburg during March, 1936. Mr. Foster records that the species is found in numbers a short distance upstream from the Immigration Office, Komatipoort, at an approximate elevation

of 650 feet. It is nearest allied to *A. zebrina* Bak, which occurs principally in Angola and Hereroland, and which up to the present does not appear to have been recorded so far east as the Transvaal. From Berger's account⁴ *A. zebrina* is described "*sobolifera . . . folia . . . undique, praesertim subtus, striata maculisque magnis oblongis . . . picta.*" The Komati-poort specimen is a large plant, and has thrown up no suckers in 12 months, while the lower surface of the leaves is unspotted. The marginal teeth of *A. komatiensis* are smaller and more crowded, while the inflorescence is 6 feet high. From Berger's fig. C, the raceme of *A. zebrina* terminates in a tuft of bracts, whereas in *A. komatiensis* the buds are lax, the bracts at apex being fewer and not tufted. There are also differences in the flowers. From a comparison of Berger's fig. D. of a flower, with those illustrated on the accompanying plate, it will be seen that in *A. komatiensis* the perianth is comparatively narrower, less inflated at base, less constricted above the ovary, and less enlarging towards the throat. Another important distinguishing character is that the leaf sap dries purplish, while *A. zebrina* is described "*succus foliorum flavens.*" To summarise, *A. komatiensis* is distinguished from *A. zebrina* principally by plants not suckering freely, the leaves not spotted below, the differently shaped flowers, and the leaf sap drying purple.

Description.—*Herb* succulent, with stem up to 20 cm. long, apparently not suckering. *Leaves* 16—24, densely rosulate, lanceolate-attenuate, rather fleshy, up to 40 cm. long, 12 cm. broad, arcuate-spreading in lower portion, slightly recurved in upper quarter; upper surface flat near base, slightly canaliculate near apex, dull green, obscurely lineate and obscurely spotted throughout, the large dull white oval spots confluent and arranged more or less into a series of undulating, interrupted transverse bands; lower surface convex, duller green, obscurely lineate, immaculate; the margins sinuate dentate, armed with brown deltoid pungent slightly deflexed teeth 4 mm. long, 10—12 mm. distant. *Inflorescence* 2 met. high, branched slightly above the middle, with about 8 arcuate-erect branches, the 1—3 lowest with 1—3 branchlets forming a rather compact panicle of about 12 racemes, the lowest branches subtended at base by subscariosus attenuate bracts 4—5 cm. long, the bracts with a few marginal teeth near apex. *Peduncle* slightly flattened low down and about 3 cm. diam., lightly covered with a greyish powdery substance. *Racemes* cylindric, slightly acuminate, the terminal the highest, about 40 cm. long, 6—7 cm. diam., rather loosely about 40—50-flowered, the lateral shorter, fewer flowered, about 30 cm. long. *Pedicels* lowest of terminal raceme up to 9 mm. long, slightly longer in the fruit. *Bracts*

⁴ Vide Engler: Das Pflanzenreich, Liliac.-Asphodel.-Alcin, p. 207.

narrowly lanceolate-acuminate, thin, subscariosus, obscurely many nerved, somewhat brownish, slightly longer than the pedicels. *Perianth* dull brick-red, 30 mm. long, with a subglobose basal swelling 9.5 mm. diam., constricted to 5.5 mm. above the ovary, thence slightly decurved and enlarging a little towards the throat, the mouth wide open. *Outer segments* free for 7 mm. from apex, the free portion with dull white 1 mm. wide marginal border, very obscurely many-nerved, the apices subacute, spreading. *Inner segments* dorsally adnate to the outer for their greater length, broader than the outer and with broader dull white marginal border, the apices more obtuse and more spreading. *Filaments* pale lemon, flattened, the 3 inner lengthening in advance of the 3 outer, the outer twice as broad near base as the inner. *Anthers* the 3 inner and 3 outer in turn exerted 1—2 mm. *Style* pale orange low down, paler upwards, with the stigma at length exerted 1—2 mm., and remaining exerted after pollination. *Ovary* light green, 8 mm. long, 3 mm. diam., slightly tapering into the style, finely 6-grooved. After 12 hours the leaf sap dries purplish.

Aloe pruinosa, Reynolds, species nova et distincta in sectione *Saponarium*, *A. Greenii*, Bak. affinis, sed foliis longioribus, pedunculis longioribus differt. *Herba* succulenta, caulibus usque ad 30 cm. longis. *Folia* 16—24, dense rosulata, lanceolato-attenuata, patentia, recurvula, usque ad 70 cm. longa, 10 cm. lata; supra canaliculata, subtus convexa, ubique, praesertim subtus, maculis copiosis oblongis confluentibus irregulariter transverse undulato-fasciatis picta, margines sinuato-dentati, dentibus deltoideis pungentibus 3—4 mm. longis, 15—20 mm. distantibus armati. *Inflorescentia* circiter 2 met. alta, pedunculus supra medium 9—12-ramosus, valde glauco-pruinosis. *Racemi* cylindrico-acuminati, terminali usque ad 20 cm. longi, basi 7 cm. diam. *Bractae* anguste lanceolatae, acuminatae, scariosae, plurinerviae, 10—12 mm. longae. *Pedicelli* 10—12 mm. longi. *Perigonium* 30—33 mm. longum, sordide rubro-brunneum, valde glauco-pruinosis, basi inflatum, (8 mm. diam.) supra ovarium valde constrictum, (5 mm. diam.) decurvatum et faucem versus ampliatum. *Segmenta exteriora* per 7 mm. libera, ad margines albida, interiora libera, latiora, obtusiora. *Genitalia* per 1—2 mm. exserta. *Ovarium* 8 mm. longum, basi 3 mm. diam.

Hab: Natal, 10 miles south-east of Pietermaritzburg on the road to Durban, among thorn bushes, cultivated plant flowered 15th March, 1936, in Johannesburg, Reynolds 377 (type) in National Herbarium. Pretoria, and Bolus Herbarium, Kirstenbosch. Plant No. 1611/34 in National Botanic Gardens, Kirstenbosch, and No. 1195.4.36 in Garden of the Botanical Section, Division of Plant Industry, Pretoria. (Plate XVII.)



FIG. 2.



FIG. 1.

PLATE XVII. *Aloe pruinosa*, Reynolds.

- FIG. 1. Plant collected by the author near Fairview, 10 miles south-east of Pietermaritzburg, Natal, flowering 14 March, 1936, in his garden in Johannesburg; height 6 feet.
- FIG. 2. Flowers natural size, from the bud to post-pollination stage.

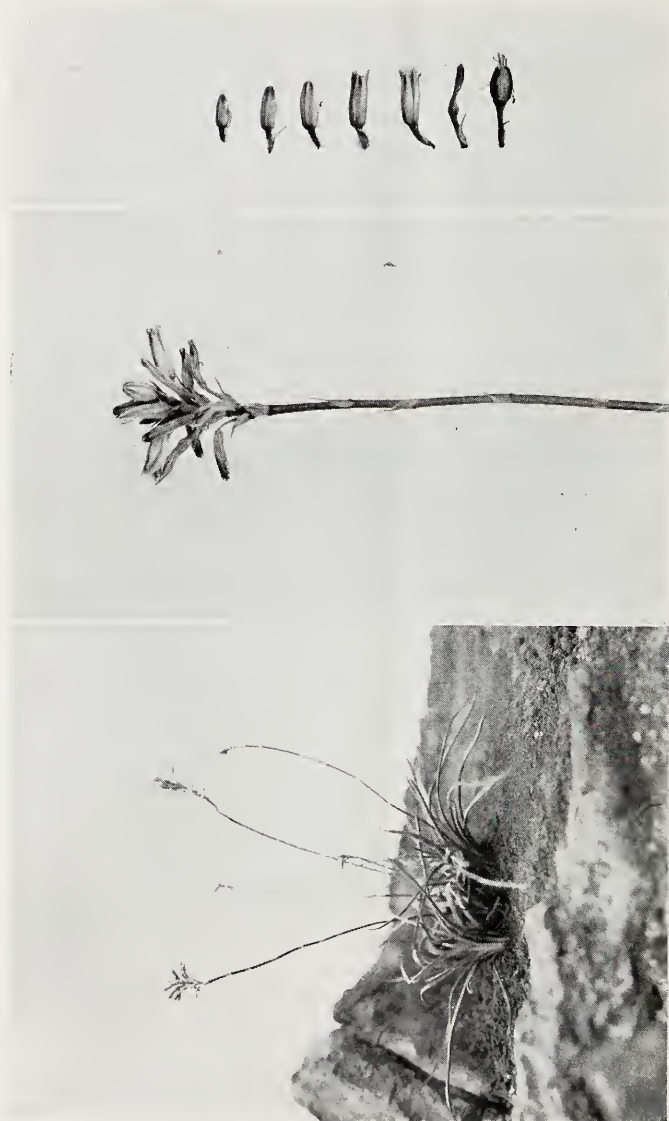


FIG. 1.

FIG. 2.

FIG. 3.

PLATE XVIII. *Leptaloe Saundersiae*, Reynolds.

FIG. 1. Plants ($\times \frac{1}{2}$) collected by Lady Saunders in the Nkandhla Dist., Zululand, flowering 15 March, 1936, in Johannesburg.

FIG. 2. Raceme, with portion of the peduncle, natural size.

FIG. 3. Flowers natural size, from bud to fruit stage.

This distinctive species occurs in thorn country in the vicinity of Fairview (formerly known as Thornybush), about 10 miles south-east of Maritzburg, on the road to Durban. In size of rosette and leaf, and in height and branching of the inflorescence, *A. pruinosa* resembles the robust form of *A. Dyeri* Schonl. found near Waterval Boven, Kaapsche Hoop and elsewhere in the mountainous parts of the Eastern Transvaal, but the latter cannot be confused with its peculiar leaf spotting, longer more cylindric racemes, and the different size and shape of its much redder flowers.

A. pruinosa appears to be nearest allied to *A. Greenii* Bak. which also occurs near Maritzburg, but it is a much larger plant, differing in too many respects to be regarded merely as a very robust growth form of *A. Greenii*. *A. pruinosa* occurs mostly as solitary plants, rarely in small groups, and develops a stem up to 30 cm. long, whereas *A. Greenii* suckers freely, soon forms dense groups, and has little or no stem. The former has leaves more spreading, up to 70 cm. long, with the rosette 1.3 to 1.6 met. diam., while the latter has shorter more erectly-recurved leaves up to 40 cm. long, of a more yellowish-green colour, with the spots in more defined transverse bands, especially below. In the inflorescence there are many differences. In *A. Greenii* the inflorescence is usually about 1—1.25 met. high and with 4—7 sub-erect branches, the racemes are more cylindric, the buds laxer, with the flowers light to dark flesh-pink, "ranging from Corinthian pink to Dragons blood red"—R.C.S.⁵ In *A. pruinosa* the inflorescence reaches 2 metres in height, the racemes are denser and more conic, while the flowers are a peculiar very dull brownish-red. A very striking feature of this species is that the peduncle and flowers are heavily coated with a greyish powdery substance, giving the racemes a very dull appearance, on which account the above name is proposed. The species is described from observations near Fairview, and from plants which flowered in Johannesburg during March 1934-35-36.

Description.—*Stem* up to 30 cm. long. *Leaves* 16—24, densely rosulate, lanceolate-attenuate, up to 70 cm. long, 8—10 cm. broad at base, spreading and slightly recurved; upper surface canaliculate, green, with numerous white spots throughout, the spots somewhat "H" shaped, scattered, or sometimes confluent into a series of more or less wavy irregular interrupted transverse bands; lower surface convex, the spots more copious, more elliptic, and in more defined transverse bands; the margins sinuate-dentate, the teeth deltoid, pungent, pale pinkish-

⁵ R.C.S. refers to colours taken from Ridgway's "Color Standards and Color Nomenclature," Washington, 1912.

brown, up to 4 mm. long, 15—20 mm. distant, slightly deflexed, smaller and more crowded near base, larger and more distant upwards. *Inflorescence* 2 metres high, branched above the middle, with about 11 arcuate erect branches, the 1—3 lowest with 1—2 branchlets forming a rather compact panicle; the lowest branches subtended at base by sub-scarious acuminate bracts up to 10—13 cm. long. *Peduncle* flattened and up to 4 cm. diam. low down, gradually semi-terete upwards, brown, copiously covered with a greyish powdery substance. *Racemes* cylindric-conic, the terminal up to 20 cm. long, 7 cm. broad, the lateral shorter and usually about 10—12 cm. long, unicoloured, the buds suberect and rather congested, gradually laxer downwards, with the open flowers about 10 mm. distant, cernuous to subpendulous, dull dark brownish-red (Pompeian Red to madder red R.C.S.). *Bracts* narrowly linear-lanceolate, acuminate, spreading and recurved, about 7—9-nerved, as long as the pedicels or slightly longer. *Pedicels* the lowest 10—12 mm. long. *Perianth* 30—33 mm. long, with a sub-globose basal swelling 8 mm. diam., constricted to 5 mm. above the ovary, thence rather sharply decurved, enlarging towards the throat (8 mm.), and laterally compressed to about 5 mm. *Outer segments* free for 7 mm. from apex, very obscurely many nerved, with 1 mm. broad white marginal border, and with sub-acute slightly spreading apices. *Inner segments* free to base, but adnate dorsally to the outer for their greater length, broader than the outer, with the apices more obtuse and slightly more spreading, and with the dull white marginal border twice as broad as the outer. *Filaments* flattened, the 3 inner narrower and lengthening in advance of the 3 outer. *Anthers* the 3 inner and 3 outer in turn exerted 1—2 mm. *Stigma* at length exerted 1—2 mm. and remaining exerted after pollination. *Ovary* 8 mm. long, 3 mm. diam. at base, slightly tapering into the style, finely 6-grooved, green. The leaf sap dries deep violet.

Leptaloe Saundersiae, Reynolds, species nova, *L. minima* (Bak.) Stapf affinis, sed foliis brevioribus immaculatis, floribusque minoribus differt. Acaulis. *Folia* 10—14 multifaria, patentia, e basi paullum dilatata, anguste linearia, 5—6 cm. longa, 3 mm. lata, supra canaliculata, immaculata, subtus convexa, laevia, immaculata, vel basin versus maculis albis minutis paucis picta, marginibus dentibus minutis crebris ciliata. *Pedunculus* gracilis, 15—20 cm. longus, bracteis vacuis 6—8 scariosis ovato-acuminatis 10—12 mm. longis praeditus. *Racemus* capitatus, 2.5 cm. longus et latus. *Pedicelli* 3—4 mm. longi. *Bractee* scariosae ovato-acuminatae 3—4 mm. longae. *Perigonium* basi attenuatum, cylindricum, rectum, 8 mm. longum. *Segmenta* exteriora libera, obscure 3-nervatis, marginibus pallidioribus; interiora libera, paullum

longiora, obtusiora. *Genitalia* vix exserta. *Orarium* 2 mm. longum, 1 mm. diam.

Hab: Zululand, near Nkandhla Forest, cultivated plants flowering in Johannesburg 15th March, 1936, Reynolds 1799 (type) in National Herbarium, Pretoria. Plants 1666.3.36 in Garden of Botanical Section, Division of Plant Industry, Pretoria, and 789/36 in National Botanic Gardens, Kirstenbosch. (Plate XVIII.)

This small and distinctive *Leptaloe* was first collected by Lady Saunders in February 1931 near the Nkandhla Forest, between Eshowe and Nkandhla, Zululand, and is named in honour of the collector, to whose enthusiasm and extensive collectings South African Herbaria are indebted for much valuable material. Lady Saunders records that in the wild state this species is found in crevices or on flat rock faces, in exposed positions, frequently in dense groups of several dozen plants, somewhat resembling tufts of short grass. In their natural habitat, the leaves turn reddish in winter, and rarely exceed 5—7 cm. in length, but in cultivation they reach twice that length.

In rosette and leaf, *L. Saundersiae* is closely allied to *L. albidia* (Bak.) Stapf, but the latter is immediately distinguished by its shorter peduncle, and by the larger, distinctly bilabiate white flowers with upturned mouth. Another near ally is *L. minima* (Bak.) Stapf,⁶ but this is a larger plant differing in many characters, as is shown in the following table.⁷

L. minima.

L. Saundersiae.

<i>Plants</i> solitary among grass.	In dense groups on rocks.
<i>Leaves</i> 12—30 cm. long, sub-erect.	5—7 cm. long, spreading and recurved.
<i>Inflorescence</i> 15—30 cm. high.	10—20 cm. high.
<i>Pedicels</i> 8—15 mm. long.	3—4 mm. long.
<i>Perianth</i> 10—12 mm. long, pale reddish or pale red-lead coloured.	8 mm. long, creamy pinkish-mauve in colour.

Another striking distinguishing character is that in *L. minima* the leaves are copiously spotted dorsally, with the spots sub-tuberculate, sub-spinulose, and rough to the touch, whereas in *L. Saundersiae* the leaves are smooth and unspotted. With flowers only 8 mm. long, *L. Saundersiae* is closely allied to *L. parviflora* (Bak.) Stapf, but the latter has fewer longer distichous leaves, which are tubercular-muricate, a longer peduncle and pedicels three times as long.⁸

⁶ *Vide* Hook. Icon. plant. (1895) tab. 2423.

⁷ Fortunately the type material of *L. minima* is preserved in S. Africa; Maurice S. Evans 409! flowers light scarlet, among grass, South Downs, Weenen County, February, 1895, alt. 5-6000 ft. No. 19582 in Herb. Natal.

⁸ *Vide* Engler: Das Pflanzenreich, Liliac.-Asphodel.-Alcin. (1908), p. 165, fig. 55.

Description.—Stemless, in dense groups. *Leaves* 10—15, multifarious, narrowly linear, 5—6 cm. long, (up to 10—15 cm. in cultivated plants), 3 mm. broad at base, slightly dilated below ground: upper surface canaliculate, green, immaculate; lower surface convex, smooth, green, immaculate or with very few obscure dull white spots near base; the margins armed with minute rather soft white deltoid teeth about $\frac{1}{2}$ mm. long and 1 mm. distant near base, smaller and more crowded upwards. *Inflorescence* simple, capitate, 15—20 cm. long, sometimes 2 from a rosette. *Peduncle* terete, 1—1 $\frac{1}{2}$ mm. diam., sterile-bracteate from below the middle with 5—8 scattered thin scarious white ovate-acuminate bracts up to 10—12 mm. long, about 5 nerved, basally amplexicaul, spreading above. *Raceme* capitate, about 2·5 cm. long and broad, about 12—15 flowered, the buds suberect and slightly congested, the open flowers slightly laxer, horizontally disposed or subcernuous. *Bracts* ovate-acuminate, as long as the pedicels, spreading, thin, white, subscarious, with 3 pinkish nerves confluent at apex. *Pedicels* 3 mm. long, 4—5 mm. in the fruit. *Perianth* cylindrical, 8 mm. long slightly tapering into the pedicel, rather creamy pale pinkish-mauve, paler at mouth, the mouth not bilabiate. *Outer segments* free, with thinner white margins, obscurely 3-nerved, the nerves confluent, dull pinkish for their greater length, turning somewhat brownish at apex, the apices sub-acute straight. *Inner segments* free, not cohering dorsally to the outer, broader and slightly longer than the outer, with wider white marginal border and with more obtuse apices than the outer, 3-nerved. *Filaments* filiform, slightly flattened, the 3 inner very slightly narrower and lengthening in advance of the 3 outer. *Stamens* and *style* as long as the perianth with the anthers and stigma not exerted. *Ovary* 2 mm. long, 1 mm. diam. at the middle, very finely 6-grooved, brownish.
